CLAIMS

What is claimed is:

Claim 1. A temperature sensor comprising:

a first substrate resistance configured to be primarily responsive to a temperature of a substrate;

a first membrane resistance configured to be primarily responsive to a temperature of a membrane; and

wherein said first substrate resistance and said first membrane resistance are arranged in a series circuit configured to facilitate measurement of a voltage across each responsive to a temperature change.

Claim 2. The temperature sensor of Claim 1 further including a second membrane resistance and a second substrate resistance, wherein said first membrane resistance, said first substrate resistance, said second membrane resistance and said second substrate resistance are arranged in a bridge configuration to facilitate measurement of a differential voltage thereof.

Claim 3. The temperature sensor of Claim 2 wherein at least one of said first substrate resistance, said first membrane resistance, said second substrate resistance, and said second membrane resistance exhibits a thermal coefficient of resistance in excess of about 1200 ppm.

Claim 4. The temperature sensor of Claim 2 wherein at least one of said first substrate resistance, said first membrane resistance, said second substrate resistance, and said second membrane resistance exhibits a thermal coefficient of resistance in excess of about 1500 ppm.

Claim 5. The temperature sensor of Claim 2 wherein said first substrate resistance, said first membrane resistance, said second substrate resistance, and said second membrane resistance are formulated with substantially equivalent materials.

Claim 6. The temperature sensor of Claim 2 wherein at least one of said first substrate resistance, said first membrane resistance said second substrate resistance, and said second membrane resistance are formulated as part of a micro-electro-mechanical systems (MEMS) device.

Claim 7. The temperature sensor of Claim 1 wherein at least one of said first substrate resistance and said first membrane resistance exhibits a thermal coefficient of resistance in excess of about 1200 ppm.

Claim 8. The temperature sensor of Claim 1 wherein at least one of said first substrate resistance, said first membrane resistance, said second substrate resistance, and said second membrane resistance exhibits a thermal coefficient of resistance in excess of about 1500 ppm.

Claim 9. The temperature sensor of Claim 6 wherein said first substrate resistance and said first membrane resistance are formulated with substantially equivalent materials.

Claim 10. The temperature sensor of Claim 6 wherein said first substrate resistance and said first membrane resistance is formulated as part of a micro-electronic machined device.

Claim 11. A system for determining a temperature comprising:

a temperature sensor comprising:

a first substrate resistance configured to be primarily responsive to a temperature of a substrate;

a first membrane resistance configured to be primarily responsive to a temperature of a membrane; and

wherein said first substrate resistance and said first membrane resistance are arranged in a series circuit configured to facilitate measurement of a voltage across each responsive to a temperature change.

a controller in operable communication with said temperature sensor, said controller configured to receive a temperature signal indicative of a temperature.

Claim 12. The system of Claim 11 wherein in said temperature sensor further includes a second membrane resistance and a second substrate resistance, wherein said first membrane resistance, said first substrate resistance, said second membrane resistance and said second substrate resistance are arranged in a bridge configuration to facilitate measurement of a differential voltage thereof.

Claim 13. The system of Claim 12 wherein at least one of said first substrate resistance, said first membrane resistance, said second substrate resistance, and said second membrane resistance exhibits a thermal coefficient of resistance in excess of about 1200 ppm.

Claim 14. The system of Claim 12 wherein at least one of said first substrate resistance, said first membrane resistance, said second substrate resistance, and said second membrane resistance exhibits a thermal coefficient of resistance in excess of about 1500 ppm.

Claim 15. The system of Claim 12 wherein said first substrate resistance, said first membrane resistance, said second substrate resistance, and said second membrane resistance are formulated with substantially equivalent materials.

Claim 16. The system of Claim 12 wherein at least one of said first substrate resistance, said first membrane resistance said second substrate resistance, and said second membrane resistance are formulated as part of a micro-electro-mechanical systems MEMS device.

Claim 17. The system of Claim 11 wherein at least one of said first substrate resistance and said first membrane resistance exhibits a thermal coefficient of resistance in excess of about 1200 ppm.

Claim 18. The system of Claim 11 wherein at least one of said first substrate resistance, said first membrane resistance, said second substrate resistance, and said second membrane resistance exhibits a thermal coefficient of resistance in excess of about 1500 ppm.

Claim 19. The system of Claim 11 wherein said first substrate resistance and said first membrane resistance are formulated substantially equivalent materials.

Claim 20. The system of Claim 11 wherein said first substrate resistance and said first membrane resistance is formulated as part of a micro-electro-mechanical systems MEMS device.

Claim 21. The system of Claim 12 wherein said bridge configuration further includes an amplifier to buffer said differential voltage.

Claim 22. The system of Claim 12 further including an amplifier and summer to facilitate scaling said differential voltage and extracting a first varying portion thereof.

Claim 23. The system of Claim 11 wherein said first varying portion corresponds to variations of about 1 to 100 milliseconds.

Claim 24. The system of Claim 11 wherein said controller includes at least one of: an amplifier to buffer said differential voltage; and an amplifier and summer to facilitate scaling said differential voltage and extracting a first varying portion thereof.

Claim 25. A method of determining a temperature comprising:

receiving a temperature signal, said temperature signal indicative of a composite temperature variation including a first varying portion and a second varying portion;

configuring said temperature signal to eliminate said second varying portion; and

generating a temperature value based on said configuring wherein said temperature value is substantially based on said first varying portion.

Claim 26. The method of Claim 25 wherein said temperature signal comprises a differential voltage.

Claim 27 The method of Claim 25 wherein said configuring includes scaling said temperature signal and combining said scaled temperature signal with an additional signal to cancel said second varying portion.

Claim 28. The method of Claim 25 wherein said scaling includes a gain based on a thermal coupling and indicative of a relative proportion of said first varying portion and said second varying portion.

Claim 29. The method of Claim 25 wherein said temperature signal comprises a voltage from a bridge, said bridge formed with two pairs of resistances, a first pair corresponding to a substrate resistance, and a second pair corresponding to a membrane resistance.

Claim 30. The method of Claim 25 wherein said first varying portion corresponds to variations of about 1 to 100 milliseconds and said second varying portion corresponds to variations in excess of about 200 milliseconds.

Claim 31. A system for determining a temperature comprising:

a means for receiving a temperature signal, said temperature signal indicative of a composite temperature variation including a first varying portion and a second varying portion;

a means for configuring said temperature signal to eliminate said second varying portion; and

a means for generating a temperature value based on said configuring wherein said temperature value is substantially based on said first varying portion.